

REMARKS

Applicant has carefully reviewed and considered the Office Action mailed on July 8, 2003, and the references cited therewith.

Claims 1, 21, 28, and 31 are amended, claims 29, 30 and 39, 40 are canceled, and claims are added; as a result, claims 1-3, 5-11, 21-28, and 31-38 are now pending in this application.

Claim Objections

Claims 28, 29, and 39 were objected to under 37 CFR 1.75(c) as being of improper dependent form for failing to further limit the subject matter of a previous claim. The Applicant has amended claim 28 to depend from claim 21. Claims 29 and 39 have been cancelled.

Claims 31-40 were objected to under 37 CFR 1.75 as being substantial duplicates of claims 21-30. Claims 31-40 are directed to "a method for reducing losses in wafer manufacturing." Claims 21-30 are directed to "a method for making a microcircuit having a uniform symmetry." The claims are not then a "substantial duplicate." It is respectfully requested that the Examiner reconsider and withdraw this objection.

§112 Rejection of the Claims

Claims 1-3 and 5-11 were rejected under 35 USC § 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. Page 6 of the application, lines 5 and 6 describes an exemplary oxygen plasma flowrate that includes helium. The example does not include argon. Applicant is entitled to claim embodiments of an invention and in this case, that is what is being done. Applicant did indeed describe in the specification subject matter that is now claimed, as a particular embodiment.

Claims 30 and 40 were rejected under 35 USC § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicant regards as the invention. Claims 30 and 40 have been cancelled.

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§102 Rejection of the Claims

Claims 1, 2, 5-11, 21, 22, 24-32, and 34-40 were rejected under 35 USC § 102(b) as being anticipated by Knight et al. (U.S. Patent No. 5,486,267). The present invention claims treatment in a vacuum of 3.0-6.5 Torr. The Knight patent process occurs at a pressure of 30 Torr. Furthermore, the Knight patent describes ozone flow of 3900 sccm which is much higher than the claimed range of oxygen in claims 21, 22, 24-32 and 34-40, of 300 sccm oxygen to about 2000 sccm. Therefore, Knight cannot anticipate claims 1,2, 5-11, 21, 22, and 24-32.

Claims 1, 2, 5-11, and 28 were rejected under 35 USC § 102(e) as being anticipated by Puntambekar (U.S. Patent No. 5,821,603). As has been discussed in previous responses, the Puntambekar patent describes the importance of argon in roughening a surface. The gas flows described in the Putambekar reference all have concentrations that are predominantly argon. There is no suggestion that another inert gas is suitable. In contrast, the claimed gas flowrate in the present application consists essentially of oxygen and helium, in order to AVOID surface roughening. Argon is not one of the gas flows claimed.

The Puntambekar reference describes an end result much different from what is claimed in the present invention. As has been discussed in previous correspondence, the claims of the present invention utilize an oxygen flowrate much greater than is described in the Puntambekar reference, and a flow where oxygen is predominant. The claims do not identify a use of argon in order to roughen the silicon nitride surface. To the contrary, the claims describe a use of helium. This is no accident. The desired result of the present invention is a surface free of discontinuities. Table II, of the Putambekar reference, cited by the Examiner, includes Argon to create the surface roughening. The desired result of the Puntambekar reference is a roughened surface. Puntambekar did not contemplate that one could create a surface resistant to discontinuity by treating it in an atmosphere of about 300 sccm to 2000 sccm oxygen, at a vacuum of 3 to 6.5 Torr and a flowrate of about 400 to 1000 sccm helium, such as is claimed in the present invention. Thus, the Puntambekar reference does not anticipate the present invention or render the present invention obvious.

Claims 1-3, 5-11, and 21-40 were rejected under 35 USC § 102(e) as being anticipated by Yin et al. (US 2002/0140056). The Yin et al. patent application does not describe a use of the plasma with deep ultraviolet lithography, as is claimed in amended claims 1, 21, and 31 and

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corresponding dependent claims. Support for the amendment can be found at page 7, lines 24-27 of the application. Therefore, the Yin et al. application does not anticipate the claims of the present application.

§103 Rejection of the Claims

Claims 3, 23, and 33 were rejected under 35 USC § 103(a) as being unpatentable over Knight et al. As discussed above, the Knight patent does not describe a treatment having the oxygen and pressure ranges claimed. There is no suggestion in the patent that treatment parameters outside of the range described would work. Therefore, the Knight et al. patent does not render the claims of the present invention obvious.

Claim 3 was rejected under 35 USC § 103(a) as being unpatentable over Puntambekar. For reasons discussed above, the Puntambekar reference teaches away from the claims. The Applicant's attorney invites the Examiner to call in order to clarify this issue, if desired.

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CONCLUSION

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 373-6976 to facilitate prosecution of this application.

If necessary, please charge any additional fees or credit overpayment to Deposit Account No. 19-0743

Respectfully submitted,

ZHIPING YIN ET AL.

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Date 9 October 03

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CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: Commissioner of Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on this 8 day of October, 2003.

Tina Kluth

Name

Z. Yin

Signature

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